42D CONGRESS, 3d Session. } HOUSE OF REPRESENTATIVES. { MIS. DOC. No. 49.

SURVEY OF KENT ISLAND NARROWS.

LETTER

FROM THE

OFFICE OF THE CHIEF OF ENGINEERS,

RELATIVE TO

The examination and survey of Kent Island Narrows.

JANUARY 16, 1873.—Referred to the Committee on Commerce and ordered to be printed.

UNITED STATES ENGINEER OFFICE,
Baltimore, Maryland, December 18, 1872.

GENERAL: The survey of Kent Island Narrows was directed in the appropriation bill of June 10, 1872. The necessary field-work was executed in October, 1872, by Mr. W. Popp, assistant engineer, whose preliminary report, accompanied by a sketch, is herewith inclosed.

To show the relations of the proposed improvement to the adjacent country and communications by water, reference is requested to Coast Survey charts Nos. 34 and 35. There was once an open channel through Kent Island Narrows, between Eastern Bay and Chester River, but a solid causeway was built across the Narrows, about fifty years ago, for the purpose of facilitating the communication between Kent Island and the mainland. It is probable that the construction of the causeway was an improper and illegal interference with the navigable waters of the country, and that the interposition of the rightful authority of the General Government would compel its removal, even if objection were made. If Congress should incline to appropriate the public money for re-opening navigation through Kent Island Narrows, it is recommended that it be with the condition that the causeway be entirely removed by the State or county, or so modified as, in the opinion of the Secretary of War, to be no longer an obstruction to navigation.

If the causeway were removed, dredging would still be necessary to give a useful channel, the extent of which is indicated in Mr. Popp's report and sketch. He estimates that to make a channel 100 feet in width would cost about $23,000 if 7 feet deep at low water, and about $15,000 if 6 feet deep at low water. The lessening in distance each way, between Baltimore and Easton, would be about eighteen miles, or nearly two hours in time.

Very respectfully, your obedient servant,

WM. P. CRAIGHILL,
Major of Engineers.

Brigadier-General A. A. HUMPHREYS,
Chief of Engineers U. S. Army, Washington, D. C.

BALTIMORE, MARYLAND, *December* 18, 1872.

MAJOR: I have the honor to submit the following preliminary report upon the survey of Kent Island Narrows, Maryland, made by me under your direction, from October 9 to 14, inclusive:

Kent Island Narrows formerly connected Eastern Bay with Chester River and separated Kent Island from the mainland. Some forty or fifty years ago, however, a causeway was constructed at the narrowest part, connecting the island with the mainland and cutting the Narrows into two parts. The difference in the time of high water for those two parts, resulting from the stoppage of the natural flow of the tidal current by this causeway, taken advantage of to erect a tide-mill, a race was constructed on the eastern bank of the Narrows, and the alternating current, resulting from the diffierence in level of the north and south sides, furnished the necessary motive power. There seems to be little doubt that those two structures, viz, the causeway and mill-race, contributed their share to deteriorate the natural channel in existence before their erection.

At the present day there is found a good although somewhat crooked channel, affording from 7 to 18 feet of water, running a distance of 6,000 feet between Kent Island and the mainland, obstructed only by the causeway referred to. At the north or Chester River side, this channel terminates about 4,000 feet from the deep water of the river; at the south or Eastern Bay side, a bar 1,200 feet long separates it from the deep water of the bay. The bars consist of well-packed sand, intermixed with shells, and of oyster-banks. The soundings on and in the vicinity of those bars are very irregular, showing the well-known peculiarities of oyster-beds. The accompanying sketch, which shows about one-twentieth part of the soundings taken, and which is made from a carefully-constructed plat, will illustrate what has been said.

It is desired to obtain a continuous navigable channel of 7 feet in depth from the Chester River to Eastern Bay. This can be accomplished by dredging through the above-mentioned bars, making a gap through the existing causeway, and straightening the most crooked part of the chanel just south of the causeway. The location of the proposed channel, as shown on the accompanying sketch, is believed to be the least expensive, and promising the best results as far as durability is concerned. Several other routes were examined, but abandoned, because found to be inferior to the one chosen. They are indicated in broken red lines on the accompanying sketch.

With regard to the gap to be made through the causeway, the question arises whether the owner of it, which is Queen Anne's County, could rightfully object to it in case a majority of her people were opposed to granting the necessary funds, either for erecting a draw-bridge or for substituting a ferry for the present causeway. In order to get as full information as possible on this subject, I called on several leading gentlemen interested in the improvement. The result of my interviews was the assurance from those gentlemen that, in case the county would refuse to appropriate the necessary funds, they would take the matter in hand personally, and in no case would there be any interference with the progress of the proposed improvement.

Statistical data are now in progress of preparation, which will show the benefit to trade to be derived from the proposed improvement, and will be appended to the final report. Suffice it to say that the whole country bordering on the Eastern Bay and its tributaries, and especially the thriving town of Easton, is interested in it. Navigation from all those places is now extremely tedious and often dangerous. Their chief

and almost only market is Baltimore; the opening of Kent Island Narrows will shorten the route to Baltimore from 2 to 18 miles from various points of departure, and will do away with the necessity of rounding Kent Island on the south side and passing over the roughest part of Chesapeake Bay. The value of the trade interested will probably not fall short of $1,000,000 a year, and possibly far exceed this sum.

The proposed improvement, viz, a channel 7 feet deep at mean low water, 100 feet wide at bottom, with sufficient side-slopes, as shown on accompanying sketch, will require the excavation of 70,000 cubic yards of material.

The estimated cost of the improvement is:

70,000 cubic yards, at 30 cents	$21,000
10 per cent. for engineering, &c]	2,100
Total amount	23,100

A channel of the same description, but only 6 feet in depth, will cost $15,000.

The mean rise and fall of tide is about 1½ feet. If funds are appropriated, the work can be completed in one season, and no additional funds will be required for maintaining the channel for a long time.

Very respectfully, your most obedient servant,

WILLIAM POPP.

Major W. P. CRAIGHILL,
Corps of Engineers, United States Army,
Baltimore, Maryland.

DECEMBER —, 1872.

SIR: The act of Congress known as the river and harbor bill, approved June 10, 1872, making provision for the examination and survey of Kent Island Narrows, and the execution of the work being confided to you, we comply with section 3 of said act by communicating "the amount of tonnage of commercial business," "with such other facts as bear upon the contemplated improvement" at this point.

The improvement needed at Kent Island Narrows is the opening of an old channel, so as to give a better and more direct route, shortening the distance twenty miles for vessels trading from Saint Michael's and Wye Rivers to the city of Baltimore. Taking the sailing-vessels and steamboats trading the past year on these waters, with an average of three trips a month for the former and the actual number of trips made by the latter, it gives for the year a sum-total of 274,000 tons of commercial tonnage to go through these Narrows if the route were open to this class of vessels. Besides, it would make a saving in distance of more than forty-six thousand miles per annum, which, by the consequent reduction of time and expense, would double the amount of tonnage of this local trade in a short time.

But the opening of these Narrows to navigation is not merely a question of *local* trade, nor is it practicable to estimate the amount of commercial tonnage that would be benefited by the improvement; because at times it would be a thoroughfare for all vessels of moderate dimensions trading up and down the Chesapeake Bay. By affording, as it would do for such vessels, a safe inland route in boisterous weather, and a secure harbor of refuge during storms from the mouth of Chester River to the lower

end of Poplar Island, it will be seen, by reference to the map, how general as well as important an aid to commerce this thoroughfare, when opened, will become.

Less than sixty years ago vessels with a draught of 7 and 8 feet were in the habit of passing through these Narrows. This fact is deemed important to be stated, for the removal of the obstructions to navigation that have formed since that time would be the opening of a natural channel, which would be likely to remain permanently open.

About the year 1820 a bridge and causeway were constructed between Kent Island and the mainland, which, by arresting the flow of the tide-water through a natural channel, has caused the gradual filling up of these Narrows for a short distance above and below the bridge. What is now needed is the removal of this deposit, so as to allow a free passage of navigable water through the Narrows, which would afford a safe inland and more direct route for vessels to meet the demands of the growing trade of the Chesapeake Bay and its tributaries. The cost of this improvement will be insignificant, compared with the benefit to be conferred upon the commerce of this magnificent bay.

Very respectfully, your obedient servants,

EDM'D L. F. HARDCASTLE.
PHILIP F. THOMAS.
W. M. HOLLYDAY.
EDWARD LLOYD.
J. L. ADKINS.
J. C. U. POWELL.
M. M. DAWSON.
JOSEPH E. M. CHAMBERLAINE.

Colonel WILLIAM P. CRAIGHILL,
United States Corps of Engineers.

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